**X0**

Have participants represent the following problem using manipulatives and write a number sentence to show the solution.

Ladybugs in Kim’s yard have 10 spots. She catches 4 ladybugs on Tuesday, 5 ladybugs on Wednesday, and 6 ladybugs on Thursday. How many total spots did she catch each day? Explain your answer.

**X5**

Exploring the Facts: An Investigation with Pennies

Participant’s need the Piggy Bank Work Mat and counters or pennies.

Have them solve the following problem, showing it on the mat and writing a number sentence.

Mrs. Alexander bought each of her 7 grandchildren a piggy bank. She put 5 pennies in each bank. How many pennies did she need?

Discuss strategies used. They may include drawing, skip counting, using counters, repeated addition, creating tables, and multiplication.

**X1**

Math Checkers

This is played like regular checkers but in order to move to a vacant spot, a player must read the multiplication fact and name the correct product.

**X0**

Explore Misunderstandings

Pose some addition and multiplication sentences on the board and ask participants to tell how they are the same and different.

0 x 3 = 0 0 + 3 = 3

0 + 7 = 7 0 x 7 = 0

**X3**

Connect to Division

Pose word problems.

For example, The zookeeper sent his assistant to buy fruit for the chimpanzee triplets, He bought 3 grapefruit, 6 peaches, 9 oranges, 12 apples, 15 bananas, 18 berries, and 21 grapes. How many of each type fruit will go into the 3 baskets if it is shared equally?

Have participants use counters and then draw pictures and write number sentences to solve the problem.

**X4**

Visualizing Patterns on 1-40 Chart

Have participants chart multiples of 2 and 4 on a 1-40 chart. They can circle multiples of 2 and X multiples of 4. Discuss the last two questions.

**X6**

Examining Polygons

Have polygons available. Ask participants to find the number of sides for 4 hexagons. Write number sentence. Do these for several amounts. What strategies do they use? Draw pictures? use number strategies?

How many sides on 3 hexagons and 3 triangles? 5 hexagons and 5 triangles?

7 hexagons and 7 triangles?

What do you notice about the total number of sides for hexagons compared to triangles?

**X9**

Ten Chains

Have participants create ten-chains with cubes. Have them find the total number of cubes in four ten-chains and write the number sentence. Then have them take one cube away from each ten-chain and find the total number for four nine-chains.

Repeat for six ten-chains.

Ask how knowing 10 x a number can help find 9 x a number.

**X 8**

Sum Up the Facts

Shuffle cards and place them faced down. Students take turns selecting a card, finding the product and recording it. After 4 rounds, players find sum of 4 products. Player with largest sum wins.

**X 7**

Spinning facts

Student spins 6-9 spinner twice and multiples the two digits. He covers the product in any one place on his game board. If product is already covered, player must pass for that turn. Players alternate turns until someone gets three in a row horizontally, vertically, or diagonally.